

CLAIMS

1. An antenna comprised of an antenna element, a support, and a ground contact spring formed integrally from sheet metal, wherein:

said antenna element is located at one side with respect to said support, and

said ground contact spring extends to the other side from said support in an elastically deformable manner.

2. An antenna as set forth in claim 1, wherein said support has a shape extending in a longitudinal direction and said ground contact spring is inclined with respect to a longitudinal direction of said support by a predetermined angle toward the outside.

3. An antenna as set forth in claim 1, wherein said support is designed to straddle a projecting ridge extending in a longitudinal direction and has a shape enabling it to be attached and fixed to said projecting ridge, has at its two ends parts curved in U-shapes extending from one surface of said projecting ridge to the other surface, and is structured so that when said antenna is mounted on said projecting ridge, the U-shaped curved parts at the two ends of the antenna support in the longitudinal direction are fit over the two ends of the projecting ridge in the longitudinal direction to affix the same.

4. An antenna as set forth in claim 2, wherein said sheet metal is springy sheet metal with a good solder deposition property and no surface treatment.

5. An antenna as set forth in claim 4, wherein the material of said sheet metal is German silver.

6. A device comprised of a housing having a projecting ridge, a functional unit having a conductor at its periphery and affixed to said housing so that at least part of said periphery adjoins said projecting ridge, and an antenna, wherein

said antenna is comprised of a support

designed to straddle said projecting ridge and supported by said housing, a ground contact spring extending from said support to the periphery of said functional unit and contacting at least part of the periphery of said functional unit, and an antenna element extending from said support to an opposite side of said support when seen from said ground contact spring, said support, ground contact spring, and antenna element being integrally formed by sheet metal.

7. A device comprised of a functional unit, a lid able to open and close with respect to said functional unit via a hinge and having a display, and an antenna, wherein

said lid is provided with a housing having a projecting ridge and a display having a conductor at its periphery and affixed to said housing so that at least part of said periphery adjoins said projecting ridge, and

said antenna is comprised of a support designed to straddle said projecting ridge and supported by said housing, a ground contact spring extending from said support to the periphery of said functional unit and contacting at least part of the periphery of said functional unit, and an antenna element extending from said support to an opposite side of said support when seen from said ground contact spring, said support, ground contact spring, and antenna element being integrally formed by sheet metal.

8. A device as set forth in claim 6 or 7, wherein said support extends in a longitudinal direction so as to be able to straddle said projecting ridge extending in said longitudinal direction by a predetermined dimension, said ground contact spring is inclined with respect to a longitudinal direction of said support by a predetermined angle toward the conductive side of said display, and said ground contact spring is brought into elastic contact with the conductive side of said display when

mounting the antenna to the projecting ridge.

9. A device as set forth in claim 6 or 7, wherein:  
a pair of projecting ridges of said lid housing is provided at an interval on the same line along the front surface of said display, and  
a pair of antennas is mounted on the pair of projecting ridges.

10. A device as set forth in claim 6 or 7, wherein:  
said support has at the two ends of said projecting ridge extending in a longitudinal direction parts curved into U-shapes extending from one surface of the front surface and back surface of said projecting ridge to the other surface, and

the U-shaped curved parts at the two ends in the longitudinal direction of said antenna support are fit over the two ends in the longitudinal direction of said projecting ridge to affix the same.

11. A device as set forth in claim 6 or 7, wherein said sheet metal is springy sheet metal with a good solder deposition property and no surface treatment.

12. A device as set forth in claim 6 or 7, wherein the material of said sheet metal is German silver.

13. A device as set forth in claim 6 or 7, wherein said functional unit or display is a liquid crystal display unit.

14. A device as set forth in claim 6 or 7, wherein said device is a laptop personal computer.

15. A device as set forth in claim 6 or 7, wherein:  
said functional unit is a liquid crystal display unit, and

the projecting ridge of the device housing is a projecting ridge provided at a front surface of the device at an opposite side to the hinge of the liquid crystal display unit.

16. A method of affixing an antenna comprised of an antenna element, a support, and a ground contact spring formed integrally from sheet metal, said antenna element

being located at one side with respect to said support and said ground contact spring being located at the other side extending from said support in an elastically deformable manner, said method comprising mounting the support of said antenna to a projecting ridge so as to straddle said projecting ridge and bringing said ground contact spring into contact with the ground conductor at the same time as mounting.

17. A method of affixing an antenna as set forth in claim 16, further comprising using as said support one having a shape extending in the longitudinal direction, inclining said ground contact spring with respect to the longitudinal direction of said support by a predetermined angle to the outside, and fitting said support over said projecting ridge to straddle said projecting ridge and thereby affix the same.

18. A method of affixing an antenna as set forth in claim 16, further comprising using as said support one having at two ends of said projecting ridge extending in a longitudinal direction portions bent into U-shapes extending from one surface of said projecting ridge to the other surface and fitting the U-shaped curved parts at the two ends in the longitudinal direction of said antenna support over the two ends in the longitudinal direction of said projecting ridge so as to mount said antenna on said projecting ridge.

19. A method of affixing an antenna as set forth in claim 17, further comprising using as said sheet metal springy sheet metal with a good solder deposition property and no surface treatment.

20. A method of affixing an antenna as set forth in claim 19, further comprising using as the material of said sheet metal German silver.

21. A device comprised of a functional unit, a lid able to open and close with respect to said functional unit via a hinge and having a display, and an antenna, wherein

said lid is provided with a housing having a projecting ridge for mounting said antenna and a display having a conductor at least at part of its periphery and affixed to said housing so that at least part of the periphery adjoins said projecting ridge.

22. A device as set forth in claim 21, wherein a pair of projecting ridges of said housing of said lid are provided at an interval on the same line along the front surface of said display.

23. A device as set forth in claim 21, wherein:  
said support has at the two ends of said projecting ridge extending in a longitudinal direction parts curved into U-shapes extending from one surface of the front surface and back surface of said projecting ridge to the other surface, and

the U-shaped curved parts at the two ends in the longitudinal direction of said antenna support are fit over the two ends in the longitudinal direction of said projecting ridge to affix the same.

24. A device as set forth in claim 21, wherein one of said functional unit and display is a liquid crystal display unit.

25. A device as set forth in claim 21, wherein said device is a laptop personal computer.

26. A device as set forth in claim 21, wherein:  
the functional unit is a liquid crystal display unit, and

the projecting ridge of the device housing is a projecting ridge provided at a front surface of the device at an opposite side to the hinge of said liquid crystal display unit.

27. A device as set forth in claim 20, wherein:  
a pair of projecting ridges of said housing of said lid are provided at an interval on the same line along the front surface of said display, and  
a pair of antennas is mounted on the pair of projecting ridges.

28. A device comprising a housing having a projecting ridge, a functional unit having a conductor at least at part of its periphery and affixed to said housing so that at least part of said periphery adjoins said projecting ridge, and an antenna, wherein a ground contact spring is arranged to contact a ground conductor of said functional unit at the same time as mounting of said antenna.

29. A device provided with a functional unit, a lid able to open and close with respect to said functional unit via a hinge and having a display, and an antenna, wherein

said lid is provided with a housing having a projecting ridge and a display having a ground conductor at least at part of its periphery and affixed to said housing so that said side surface adjoins said projecting ridge, and

a ground contact spring is arranged to contact the ground conductor of said functional unit at the same time as mounting of said antenna.